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REMARKS

Claims 1-9 are pending in this application, with Claims 1 and 5 being independent. Claims 1 and 5 are amended herein to improve their form and to recite that the ink-receiving layer is at least 15 μm thick. Support for the amendment can be found in the specification at least at page 14, lines 25-27. Applicants respectfully submit that no new matter has been added by the amendments herein.

Claims 1-9 were rejected under 35 U.S.C. §103(a) as allegedly obvious over Kato, et al. (U.S. Patent No. 5,538,549) in view of Eguchi, et al. (U.S. Patent No. 6,342,289). Applicants respectfully request reconsideration of this rejection as applied to the present claims.

The present invention, as recited in independent Claim 1, relates to an ink-jet recording system comprising a recording medium and an ink-jet printing apparatus comprising ink containers in which a plurality of pigment inks are contained, and ink-jet heads for ejecting the respective pigment inks towards the recording medium. The recording medium is provided with an ink-receiving layer having porous structure on a base material, the ink receiving layer comprising alumina hydrate particles and resinous binder, and having a pore volume of 0.1 to 1.0 ml/g. Each of the pigment inks comprises pigment particles and a resin in an aqueous medium. In each of the pigment inks,

the diameter of the pigment particles falls within a range of from 10 to 500 nm, and the proportion of the pigment particles having a diameter of 300 to 500 nm based on the total number of pigment particles in the ink is at most 30%. The ink receiving layer has a thickness of at least 15 μ m. Independent Claim 5 relates to an ink-jet recording method of comparable scope.

As discussed in the Amendment filed September 4, 2002, some of the advantages of the claimed ink-jet recording system and method are that when a plurality of pigment inks are applied to a recording medium to record a full-color image (in which case, the total amount of the ink applied is large), the ink is well-absorbed and images having excellent properties such as rub-off resistance can be obtained. In Applicants' view, the cited references do not teach or suggest the claimed invention.

Kato et al. provides a recording ink including a pigment as a coloring agent. Eguchi et al. relates to a recording medium having a porous ink-receiving layer containing alumina hydrate of boehmite structure formed on a base material. Applicants disagree with the Examiner's statement that Kato et al. teaches the use of any kind of recording paper. As shown in col. 9, lines 40-43 and col. 10, lines 31-32, Kato et al. discloses the use of only one kind of recording paper -- a copy sheet (L type paper available from FUJI XEROX KABUSHIKI KAISHA, Japan). Applicants submit that therefore, a person skilled in

the art would not be motivated to use the recording ink of Kato et al. on the recording medium of Eguchi et al. Accordingly, it is not proper to combine these references.

In addition to those features of the claimed invention that are acknowledged by the Examiner as features not taught by the Kato et al. reference, Kato et al. also does not teach or suggest an ink-receiving layer having a thickness of at least 15 μm , another feature of Claims 1 and 5. Because Eguchi et al. does not teach or suggest this feature either, Applicants submit that Eguchi et al. does not remedy the deficiencies of the Kato et al. reference. Therefore, even if one were to combine the two references, the claimed ink-jet recording system and method would not result.


Applicants conclude that the cited references do not render obvious the claimed invention, and respectfully request that the Section 103 rejection be withdrawn.

Applicants submit that the present invention is patentably defined by independent Claims 1 and 5 for the reasons discussed above. The dependent claims are also submitted to be patentable for the same reasons and because they set forth additional aspects of the present invention. Individual consideration of each dependent claim is requested.

Applicants request favorable reconsideration,
withdrawal of all rejections and early passage to issue of the
above-identified application.

Applicants' undersigned attorney may be reached in our
Washington, D.C. office by telephone at (202) 530-1010. All
correspondence should continue to be directed to our below-listed
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Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES TO THE CLAIMS ✓

1. (Twice Amended) An ink-jet recording system comprising:

a recording medium;

an ink-jet printing apparatus comprising ink containers in which a plurality of pigment inks are contained, and ink-jet heads for ejecting the respective pigment inks towards the recording medium,

wherein the recording medium is provided with [a porous layer as] an ink-receiving layer having porous structure on a base material, the [porous] ink-receiving layer comprising alumina hydrate particles and resinous binder, and [the porous layer] having a pore volume of 0.1 to 1.0 ml/g; [and]

wherein each of the pigment inks comprises pigment particles and a resin in an aqueous medium, and in each of the pigment inks, the diameter of the pigment particles falls within a range of from 10 to 500 nm, and the proportion of the pigment particles having a diameter of 300 to 500 nm based on the total number of pigment particles in the ink is at most 30%; and

wherein the ink-receiving layer has a thickness of at least 15 μ m.

5. (Twice Amended) An ink-jet recording method comprising the steps of:

(i) providing a recording medium provided with [a porous layer as] an ink-receiving layer having porous struture on a base material, the ink-receiving layer comprising alumina hydrate particles and resinous binder, and [on a base material, the porous layer] having a pore volume of 0.1 to 1.0 ml/g and a thickness of at least 15 μ m;

(ii) providing an ink-jet recording apparatus comprising ink containers in which a plurality of pigment inks are contained, and ink-jet heads for ejecting the respective pigmented inks towards the recording medium, each of the pigment inks comprising a pigment and a resin in an aqueous medium, and in each of the pigment inks, the particle diameter of the pigment falling within a range of from 10 to 500 nm, and the proportion of the pigment particles having a particle diameter of 300 to 500 nm based on the total number of the pigment particles in the ink being at most 30%; and

(iii) applying at least one of the pigment inks to the recording medium.